

Message

**From:** CN=Greg Kellogg/OU=R10/O=USEPA/C=US [CN=Greg Kellogg/OU=R10/O=USEPA/C=US]  
**Sent:** 7/13/2009 6:59:39 PM  
**To:** CN=Jim Zokan/OU=R10/O=USEPA/C=US@EPA;CN=Lorraine Edmond/OU=R10/O=USEPA/C=US@EPA;CN=Martha Turvey/OU=R10/O=USEPA/C=US@EPA;CN=Greg Kellogg/OU=R10/O=USEPA/C=US@EPA;CN=Leigh Woodruff/OU=R10/O=USEPA/C=US@EPA; N=Lorraine Edmond/OU=R10/O=USEPA/C=US@EPA;CN=Martha Turvey/OU=R10/O=USEPA/C=US@EPA;CN=Greg Kellogg/OU=R10/O=USEPA/C=US@EPA;CN=Leigh Woodruff/OU=R10/O=USEPA/C=US@EPA; N=Martha Turvey/OU=R10/O=USEPA/C=US@EPA;CN=Greg Kellogg/OU=R10/O=USEPA/C=US@EPA;CN=Leigh Woodruff/OU=R10/O=USEPA/C=US@EPA; N=Greg Kellogg/OU=R10/O=USEPA/C=US@EPA;CN=Leigh Woodruff/OU=R10/O=USEPA/C=US@EPA; N=Leigh Woodruff/OU=R10/O=USEPA/C=US@EPA  
**Subject:** Region X Mercury Strategy  
**Attachments:** Mercury methylation in estuaries\_2006NRES633.pdf; www.csp2.org; kzamzow@csp2.org

Thought you would find Kendra's message and attachment valuable. She was at our Fairbanks and Anchorage workshops last week.

Greg

----- Forwarded by Greg Kellogg/R10/USEPA/US on 07/13/2009 10:58 AM -----

Kendra Zamzow <kzamzow@csp2.org>

Sent by: **Ex. 6 PII, Kendra Zamzow**

07/12/2009 09:06 AM

To: Greg Kellogg/R10/USEPA/US@EPA

cc

Subject: Region X Mercury Strategy

Hi Greg:

I re-read the Region X Mercury Strategy. I believe I read it in June and sent comments to you. My focus then, and my focus previously when attempting to set up a meeting of agencies via DNR in April, was fairly narrowly focused on the upcoming air regulations of Hg related to gold mines.

After having attended ACMS and re-reading the Hg Strategy, I can see the mining slice is only one segment of a much broader issue. I would very much support an EPA-USGS type of Mercury Roundtable for tech information transfer, as outlined in the strategy. I believe we are going to find that simply looking at organic carbon in waters is not going to give us a good handle on methylation potential, but that it will need to be combined with measurements of dissolved oxygen and redox. I was intrigued by Dr. Krabbenhofts findings of methylation at the oxycline in oceans (although it still seems odd to me that sulfate-reducing bacteria would be able to stay at this depth -- I need to correspond with him about that). The combination of oxycline and DOC may be a good screening method for lakes and sediments here in Alaska. I suspect that in deep lakes where the oxycline is in the water column, we will likely not see much methylation (SRBs generally don't like to hang out in water, they like something to park on), but where it is in the sediment, we likely will see methylation. I think we will also see demethylation via UV light occurring in shallow ponds and lakes during the summer.

Okay, I'm rambling about in the weeds, but I would be interested in knocking some of this around with a group of scientists who are working on mercury issues. I've attached a paper I wrote in 2006 about factors affecting methylation. Not cutting edge science, just a lit review, but I don't think I've seen such a summary elsewhere.

I still think that there is a gaping hole in the Region X Strategy not addressing monitoring of Hg from gold mines, but this could fit into the "monitoring of local sources" section. I thoroughly disagree with the approach of promoting "voluntary" reduction in Hg by industry -- it didn't work in Nevada, and I really can't see it working here. I would still continue to push for regulations, frequent monitoring, and unscheduled visits by regulators (preferably federal) in general, and mass balance approach to determining mercury fate for mine processing.

The original attempt I made with Jack DiMarchi to bring about a meeting was focused on how regulators would incorporate upcoming federal regs on gold mine Hg. Perhaps a better approach would be the EPA-USGS Mercury Roundtable suggested in the Region X Strategy, with an Alaska-wide rather than industry focus, and discussing the issues and science specific to Alaska (tundra low pH/high DOC as driver for methylation, deposition from China, transport via ocean currents, impact of geologic sources on local ponds and watersheds, etc).

How would Thursday July 23 work for you as a time to chat about what form a group meeting could take? I have a tentative meeting with the Nature Conservancy and the Pebble Partnership that day, although not sure of the time. Tuesday July 21 around 10:30 am could work too.

Thanks for bringing me into the loop on this.

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Mercury

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**Ex. 6 PII**